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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
GE, YUZHEN	
ART UNIT	PAPER NUMBER
2624	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)
	10/651,854	PURI ET AL.
	Examiner	Art Unit
	Yuzhen Ge	2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) *27-29* is/are withdrawn from consideration.

5)☒ Claim(s) *30-32* is/are allowed.

6)☒ Claim(s) *1-26 and 33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. ______.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

Examiner's Remark

Applicant's response to election/restriction requirement, filed on Feb. 7, 2007, has been received and entered into the file. According to the response, Species I (claims 1-26, 30 and 33, the examiner believes that claim 33 should also be in this species) is elected without traverse and therefore claims 27-29 and 31-32 are withdrawn from examination. However because claim 30 is allowed, election requirement on claims 31-32 is withdrawn.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claim 16 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It recites that 16 different classifications are used including 14 syndrome coding classes. However it is not clear from the specification what are the 14 syndrome coding classes. Therefore the claimed subject matter is not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim Rejections - 35 USC § 102

2. Claims 1-8, 10-15, 17-19, and 21-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Jozawa et al (US Patent 6,785,331 B1).

Regarding claim 1, Jozawa et al teach a method for encoding digital information, the method comprising

identifying a target code word that represents at least a portion of the digital information (col. 1, lines 16-27, list 1 on col. 4, lines 38-67, col. 5, lines 20-27, the current macroblock being encoded is the target code word which contains all the coefficients in the macroblock);

determining a set of a plurality of code words, wherein the set includes the target code word (col. 1, lines 16-27, list 1 on col. 4, lines 38-67, col. 5, lines 20-27, the frame that the current macroblock is located includes a plurality of code words, and a VOP also includes a plurality of code words); and

selecting an index, wherein the index indicates the determined set (col. 1, lines 16-27, list 1 on col. 4, lines 38-67, col. 5, lines 20-27, the index can be VOP identifier or the frame number, either of which will indicate the determined set which includes a plurality of code words or macroblocks).

Regarding claim 2, Jozawa et al teach the method of claim 1, further comprising defining a plurality of sets of code words (col. 1, lines 16-27, list 1 on col. 4, lines 38-67, col. 5, lines 20-27, there are many frames and there can be different VOP).

Regarding claim 3, Jozawa et al teach the method of claim 2, further comprising defining a partition of sets of code words (inherent from MPEG that a slice includes many macroblocks or code words, col. 1, lines 9-16, col. 5, lines 29-42).

Regarding claim 4, Jozawa et al teach the method of claim 1, further comprising deriving a check value from the target code word (col. 2, lines 37-55, the motion vector is regarded as the check value because the check value is not defined explicitly in the claim and can be any number).

Regarding claim 5, Jozawa et al teach the method of claim 1, wherein the target code word indicates one or more pixel values in digital video information (col. 1, lines 16-27, list 1 on col. 4, lines 38-67, col. 5, lines 20-27, a macroblock indicates one or more pixel values).

Regarding claim 6, Jozawa et al teach the method of claim 1, wherein the target code word indicates a macro block in a frame of digital video information (col. 1, lines 16-27, list 1 on col. 4, lines 38-67, col. 5, lines 20-27).

Regarding claim 7, Jozawa et al teach the method of claim 1, further comprising quantizing the target code word (col. 2, lines 60-67, Figs. 1 and 3).

Regarding claim 8, Jozawa et al teach the method of claim 7, wherein the digital information includes digital video information including frames and wherein the target code word is encoded using intra-coding within a given frame of the digital video information (col. 5, lines 20-41, col. 4, lines 37-67, col. 6, lines 33-41, also inherent from MPEG).

Regarding claim 10, Jozawa et al teach the method of claim 1, further comprising transforming at least a portion of the digital information from a spatial domain into a frequency domain (Figs. 1 and 3, col. 2, lines 56-67, also inherent from MPEG).

Regarding claim 11, Jozawa et al teach the method of claim 10, wherein the step of transforming includes a substep of using a discrete cosine transform (Figs. 1 and 3, col. 2, lines 56-67, also inherent from MPEG).

Regarding claim 12, Jozawa et al teach the method of claim 1, further comprising classifying blocks of the digital information for subsequent processing (col. 4, line 28-col. 5, line 65, each macroblock is classified according to the VOP_TYPE and COD, Figs. 8 and 9, the classification is implicitly done, only the results are shown).

Regarding claim 13, Jozawa et al teach the method of claim 12, further comprising skipping encoding a block in response to the step of classifying blocks (col. 5, lines 51-65).

Regarding claim 14, Jozawa et al teach the method of claim 12, further comprising intra-coding a block in response to the step of classifying blocks (col. 5, lines 20-42, if VOP_TYPE = I, then it is intra-coded).

Regarding claim 15, Jozawa et al teach the method of claim 12, further comprising performing varying degrees of encoding in response to the step of classifying blocks (col. 5, lines 20-65, in

MPEG macroblocks are classified into different types and depending on the type, different encoding is performed).

Claims 17 and 18 are the corresponding apparatus and computer-readable medium claims of claim 1. Jozawa et al teach an apparatus and a computer-readable medium (Figs. 1 and 2, col. 8, lines 48-51). Thus Jozawa et al teach claim 17-18 as evidently explained in the above-cited passages.

Regarding claim 19, Jozawa et al teach a method for decoding encoded digital information, the method comprising

receiving an index (Figs. 16-22, the VOP_TYPE is received, or an identification for a frame);

using the index to determine a set of candidate code words (Figs. 16-22, the VOP_TYPE is used to determine the macroblocks belong to the VOP, or the frame identification is used to identify relevant macroblocks in the frame);

inferring a set of cues (col. 5, lines 20-51, local or conventional motion compensation infers a set of cues or predicted frames/macroblocks, also inherent from MPEG);

determining a target code word by operating on the code words in the set with a cue (Figs. 16-22, the target code word is determined by the reference macroblocks and residual/code words, also inherent from MPEG); and

using the target code word in a decoding operation (Figs. 16-22, the target codeword is used in the decoding operation such as inverse quantization and inverse transform, also inherent from MPEG).

Regarding claim 21, Jozawa et al teach the method of claim 19, wherein the cue includes a motion-based predictor (Figs. 16-22, col. 5, lines 20-65, also inherent from MPEG that a motion-based predictor is used).

Regarding claim 22, Jozawa et al teach the method of claim 21, wherein the step of inferring a cue includes a substep of deriving the motion-based predictor (Figs. 16-22, col. 5, lines 20-65, the motion-based predictor is derived in order to decode, also inherent from MPEG).

Regarding claim 23, Jozawa et al teach the method of claim 22, wherein the encoded digital information includes blocks of video information, the method further comprising decoding the encoded digital information by using the predictor and one or more code words (Figs. 16-22, col. 5, lines 20-65, the motion-based predictor or the reference macroblocks/frame, motion vector and the current residual blocks are used to decode, also inherent from MPEG).

Regarding claim 24, Jozawa et al teach the method of claim 23, further comprising estimating the best way to decode the encoded digital information by using the predictor and the one or more code words (Figs. 16-22, col. 5, lines 20-65, local motion compensation involves search the

best reference macroblock and use it to as the reference macroblocks or predictor, also inherent from MPEG).

Claims 25 and 26 are the corresponding apparatus and computer-readable medium claims of claim 19. Jozawa et al teach an apparatus and a computer-readable medium (Figs. 1 and 2, col. 8, lines 48-51). Thus Jozawa et al teach claim 25-26 as evidently explained in the above-cited passages.

Claim Rejections - 35 USC § 103

1. Claims 9 and 12-15 are rejected under 35 U.S.C (103(a) as being unpatentable over Jozawa et al in view of Wang et al (US Patent 5903673).

Regarding claim 9, Jozawa et al teach the method of claim 8. However they do not explicitly teach using motion prediction is used to determine a correlation noise value; and using the correlation noise value to partition a plurality of code word values into a plurality of sets. In the same field of endeavor, Wang et al teach using motion prediction is used to determine a correlation noise value; and using the correlation noise value to partition a plurality of code word values into a plurality of sets (Fig. 10, the macroblocks are partitioned into sets of skipped macroblocks and macroblocks to be encoded). It is desirable to reduce the required bandwidth of the encoded motion video signal and to provide a satisfactory motion video quality based on available bandwidth (col. 4, lines 14-26, col. 5, lines 1-25 of Wang et al). Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to use the method

of Wang et al in the method of Jozawa et al so that compression efficiency is increased, the required bandwidth is reduced while achieving satisfactory motion video quality.

Regarding claim 12, Jozawa et al teach the method of claim 1. However they do not explicitly teach the step or method of classifying blocks of the digital information. Jozawa et al show the results of classifying or the classification is implicitly done (col. 5, lines 20-65). Wang et al explicitly teach the classifying blocks of the digital information for subsequent processing (Figs. 6 and 10). It is desirable to reduce the required bandwidth of the encoded motion video signal and to provide a satisfactory motion video quality based on available bandwidth (col. 4, lines 14-26, col. 5, lines 1-25 of Wang et al). Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to use the method of Wang et al in the method of Jozawa et al so that compression efficiency is increased, the required bandwidth is reduced while achieving satisfactory motion video quality.

Regarding claim 13, Jozawa and Wang et al teach the method of claim 12. Jozawa et al further teach skipping encoding a block in response to the step of classifying blocks (col. 5, lines 51-65).

Regarding claim 14, Jozawa and Wang et al teach the method of claim 12. Jozawa et al further teach intra-coding a block in response to the step of classifying blocks (col. 5, lines 20-42, if VOP_TYPE = I, then it is intra-coded).

Regarding claim 15, Jozawa et al and Wang et al teach the method of claim 12. Jozawa et al further teach performing varying degrees of encoding in response to the step of classifying blocks (col. 5, lines 20-65, also inherent from MPEG).

2. Claims 4, 20 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jozawa et al in view of Fiske (US Patent 7042,587).

Regarding claim 4, Jozawa et al teach the method of claim 1. However they do not teach deriving a check value (when the check value is regarded as a checksum, although check value is not defined and can be regarded as any number as rejected in the above 102 rejections) from the target code word. In the same field of endeavor, Fiske teaches deriving a checksum from the target code word (col. 6, lines 40-59, Fig. 6). Checksum is used commonly in the art and determining whether checksum matches is also routinely done in the art. It is desirable to detect whether error has occurred during transmission of a video signal. Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to use the method Fiske to generate or derive a check value (which is regarded as check sum) from the target code word.

Regarding claim 20, Jozawa et al teach the method of claim 19. However they do not explicitly teach determining whether an operation with a cue performed on a code word produces a value that is in agreement with a check value. In the same field of endeavor, Fiske teaches determining whether an operation with a cue performed on a code word produces a value that is in agreement with a check value (col. 6, lines 40-59, Fig. 6). Checksum is used commonly in

the art and determining whether checksum matches is also routinely done in the art. It is desirable to detect whether error has occurred during transmission of a video signal. Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to use the method Fiske to determine whether an error has occurred.

Regarding claim 33, Jozawa et al teach the method of claim 19, wherein the encoded digital information corresponds to a source that can be compressed by predictive coding, wherein the decoder includes two or more cues (Figs. 16-22, col. 5, lines 20-65, both the reference macroblocks/frames and motion vector can be regarded as cues). However they do not explicitly teach that the cues produce a value that is in agreement with the check value to result in successful recovery of the target codeword. Fiske teaches determining whether an operation with a cue performed on a code word produces a value that is in agreement with a check value to result in successful recovery of a target codeword (col. 6, lines 40-59, Fig. 6). Checksum is used commonly in the art and determining whether checksum matches is also routinely done in the art. It is desirable to detect whether error has occurred during transmission of a video signal and to verify whether successful recovery of a target codeword can be achieved. Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to use the method Fiske to determine that the check sum matches and a successful recovery is resulted.

Allowable Subject Matter

3. Claims 30-32 are allowed. The following is an examiner's statement of reasons for allowance. The prior art fails to teach the listed claims each of which specifically comprises the following listed feature(s) in combination with other limitations in the respective claims:

-- the encoding process and the decoding process each use an index for a target codeword, a check value for the target codeword and a set of candidate cues

-- the steps performed by the encoder of generating a check value as a result of the operating step; determining whether the check value matches the check value for the target codeword; signaling whether the chosen cues were successful in determining the correct codeword to the decoder

-- the steps performed by the decoder of generating a check value as a result of the operating step; determining whether the result of the operating step produces a value that is in agreement with the check value for the target codeword.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Examiners's Remark

Claim 16 cannot be rejected over the prior art. The reason that it cannot be rejected over prior art is: wherein 16 different classifications are used including 14 syndrome coding classes.

Other prior art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure is listed in the following: US Patent 6,332,003 B1, by Matsuura et al and US Patent (6,950,469 B2), by Karczewicz et al.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yuzhen Ge whose telephone number is 571-272 7636. The examiner can normally be reached on 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Yuzhen Ge
Examiner
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WENPENG CHEN
PRIMARY EXAMINER

3/16/07